

CLAIMS

1. A method for processing a telephone call from a wireless
2 subscriber unit that is part of a wireless telephone system, comprising:

(a) receiving a request to make said telephone call to a receiving
4 subscriber unit;

(b) devocoding vocoded data from said wireless subscriber unit if
6 said receiving subscriber unit is a wire-based subscriber unit; and

(c) delivering said vocoded data to said receiving subscriber unit if
8 said receiving subscriber unit is a wireless subscriber unit.

2. The method as set forth in claim 1 wherein said delivering
2 includes:

(c.1) routing said vocoded data to said receiving subscriber unit
4 within said wireless telephone system if said receiving subscriber unit is part
of said wireless telephone system; and

(c.2) routing said vocoded data through a long distance
6 telecommunications system if said receiving subscriber unit is part of a
8 second wireless telephone system.

3. The method as set forth in claim 2 wherein said routing said
2 vocoded data through a long distance telecommunications system includes:

establishing an all-digital link to said second wireless telephone
4 system; and

delivering said vocoded data to said second wireless system over said
6 all-digital link.

4. The method as set forth in claim 3 wherein said all-digital link is
2 an ATM network.

5. The method as set forth in claim 3 wherein said all-digital link
2 passes through a local public switched telephone network and a long
distance telecommunications system.

6. The method as set forth in claim 1 further comprising:
2 receiving a conference call request from said wireless subscriber unit
directed to a third subscriber unit;
4 converting said vocoded data from said wireless subscriber unit into
combinable data;
6 generating combined data by combining said combinable data and
data from said third subscriber unit; and
8 generating combined vocoded data by vocoding said combined data
and transmitting said combined vocoded data to said receiving subscriber
10 unit.

7 The method as set forth in claim 6 wherein said combinable
2 data is pulse code modulated data.

8. The method as set forth in claim 1 further comprising:
2 detecting an incoming call to said wireless subscriber unit from a third
subscriber unit;

4 allocating signal processing resources to place data from said third
subscriber unit into vocoded format if said third subscriber unit is part of
6 another telephone system; and

transmitting said data from said third subscriber unit to said wireless
8 subscriber unit when call waiting is activated.

9. A cellular telephone system for processing a telephone call from
2 a requesting subscriber unit that is part of a wireless telephone system
directed to a receiving subscriber unit comprising:

4 signal routing circuitry;

signal processing circuitry for processing vocoded data; and

6 a call control processor, coupled to said signal processing
circuitry and said signal routing circuitry, for configuring said signal routing
8 circuitry to bypass said signal processing circuitry if said receiving subscriber
unit is part of said cellular telephone system, and for configuring said signal
10 processing circuitry to devocode said vocoded data if said receiving
subscriber unit is wire-based.

10. The cellular telephone system as set forth in claim 9 wherein
2 said call control processor requests an all-digital connection to said receiving
subscriber unit if said receiving subscriber unit is part of a second wireless
4 telephone system, and configures said signal routing circuitry to deliver said
vocoded data to said receiving subscriber unit through said all-digital
6 connection.

11. The cellular telephone system as set forth in claim 10 wherein
2 said all-digital connection passes through a local public switched telephone
network and a long distance telecommunications system.

12. The cellular telephone system as set forth in claim 10 wherein
2 said all-digital connection is an asynchronous transfer mode network.

13. The cellular telephone system as set forth in claim 9 wherein
2 said signal routing circuitry further comprises an interconnect subsystem.

14. The cellular telephone system as set forth in claim 9 wherein
2 said call control processor configures said signal processing circuitry to
convert said vocoded data into tones if said receiving subscriber unit is part of
4 a second wireless telephone system, and configures said signal routing
circuitry to deliver said tones to a long distance telecommunications carrier.

15. The cellular telephone system as set forth in claim 9 wherein:
2 said call control processor receives a conference call request from
said wireless subscriber unit directed to a third subscriber unit, and
4 configures said signal processing circuitry to convert said vocoded data from
said wireless subscriber unit into combinable data, to generate combined
6 data by combining said combinable data and data from said third subscriber
unit, and to generate combined vocoded data by vocoding said combined
8 data and transmitting said combined vocoded data to said receiving
subscriber unit.

16. The cellular telephone systems as set forth in claim 15 wherein
2 said combinable data is pulse code modulated data.

17. The cellular telephone system as set forth in claim 9 wherein:
2 said call control processor detects an incoming call to said wireless
subscriber unit from a third subscriber unit and configures said signal
4 processing resources to place data from said third subscriber unit into
vocoded format if said third subscriber unit is part of another telephone
6 system if call waiting is activated.

18. A wireless telephone system for processing a telephone call
2 from a requesting subscriber unit that is part of a wireless telephone system
directed to a receiving subscriber unit comprising:

4 means for routing digital information;

means for processing vocoded data; and

6 means for configuring said means for routing to bypass said
means for processing if said receiving subscriber unit is part of said wireless
8 telephone system, and for configuring said means for processing to decode
said vocoded data if said receiving subscriber unit is wire based, said means
10 for configuring being coupled to said means for processing and said means
for routing.

19. The wireless telephone system of claims 18 wherein said
2 means for configuring configures said means for routing to route said
vocoded data to said receiving subscriber unit within said wireless telephone
4 system if said receiving subscriber unit is part of said wireless subscriber
system, and to route said vocoded data through a long distance
6 telecommunication service if said receiving subscriber unit is part of a second
wireless telephone system.

20. The wireless telephone system as set forth in claim 19 wherein
2 said means for routing comprises an interconnect subsystem;

21. The wireless telephone system as set forth in claim 20 wherein
2 said means for configuring configures said means for processing to convert
said vocoded data into tones, and configures said means for routing to deliver
4 said signal to a long distance telecommunications carrier, if said receiving
subscriber unit is part of a second wireless telephone system.

22. The wireless telephone system as set forth in claim 21 wherein
2 said means for configuring requests an all-digital connection to said receiving
subscriber unit if said receiving subscriber unit is part of a second wireless
4 telephone system, and configures said means for routing to deliver said
vocoded data to said receiving subscriber unit through said all-digital
6 connection if said al digital connection is supplied.

23. The wireless telephone system as set forth in claim 22 wherein
2 said all-digital connection passes through a local public switched telephone
network and a long distance telecommunications system.

24. The wireless telephone system as set forth in claim 23 wherein
2 said all-digital connection is an asynchronous transfer mode network.

25. The wireless telephone system as set forth in claim 18 wherein:
2 said means for controlling receives a conference call request from said
wireless subscriber unit directed to a third subscriber unit, and configures
4 said means for processing to convert said vocoded data from said wireless
subscriber unit into combinable data, to generate combined data by
6 combining said combinable data and data from said third subscriber unit, and
to generate combined vocoded data by vocoding said combined data and
8 transmitting said combined vocoded data to said receiving subscriber unit.

26. The wireless telephone systems as set forth in claim 25 wherein
2 said combinable data is pulse code modulated data.

27. The wireless telephone system as set forth in claim 18 wherein:

- 2 said means for configuring detects an incoming call to said wireless
subscriber unit from a third subscriber unit and configures said means for
4 processing to place data from said third subscriber unit into vocoded format if
said third subscriber unit is part of another telephone system.